IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | |
|---|---|---|---|
| Applicant: | Chuanyou Dong | | |
| Title: | Control of Low Frequency Noise Floor in Upsampling | | |
| Application No.: | 09/608,474 | Filing Date: | June 30, 2000 |
| Examiner: | Do, Chat C. | Group Art Unit: | 2124 |
| Docket No.: | OAKT.032US0 | Conf. No.: | 2236 |

12-18-03

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450



**RESPONSE TO OFFICE ACTION**

Sir:

This is in response to the final Office Action dated July 8, 2003, accompanying a Request for Continued Examination (RCE). No amendments are being made. Reconsideration of the rejection of all of the claims 1 – 15 under 35 U.S.C. §103(a) in light of the following discussion is respectfully requested.

To summarize an understanding of the undersigned attorney of the obviousness rejection set forth in the Office Action, Figure 1 of patent no. 6,301,596 ("Karanovic") is referenced as showing an M-bit digital input signal 22 (claim 1, 1st para.) that is added with a supplement signal 34 in an adder 40 to produce a modified signal at the adder's output (claim 1, 3rd para.). It is not clear from the Office Action how the Karanovic reference is viewed as removing L bits from the output of the adder 40 (claim 1, 4th para.), although there is a discussion of truncating the output of the adder 40 by storing less than all of the output bits in the buffer 50 (Karanovic, col. 3, lns. 1-24).

The claim limitation (claim 1, 2nd para.) of an exclusive OR forming the supplemental signal 34 is acknowledged in the Office Action as missing from Karanovic. Figure 6 of patent no. 4,727,506 ("Fling") is cited for showing a pseudorandom number generator that uses an exclusive OR in a feedback loop. It is alleged that it would have been obvious in light of Fling to modify Figure 1 of Karanovic to add the exclusive OR function in the combination of claim 1.

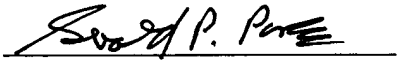
The difficulty that is seen with this position is that no motivation or suggestion can be found from the cited references for making such a combination. The Office Action alleges that it would have been obvious to one of ordinary skill to make this substitution ".. because it would help to induce a level shift in the output value." (Office Action, p. 3, ln. 12). But there is no mention in the Office Action that the cited references suggest this, and no such suggestion can be found. It is respectfully submitted that the obviousness rejection cannot stand without evidence of such a suggestion or motivation to combine the references into the claimed combination.

Further, even if the pseudorandom number generator of Fling (Figure 6) is added to the Figure 1 system of Karanovic, how would it be configured and where would it be connected? The cited references do not provide much help in this regard. The present application claim 1 (2nd para.) calls for forming an exclusive OR of N least significant bits (LSBs) of the "M-bit filtered signal," alleged to be the signal 22 of Karanovic, to "provide a one-bit supplement signal," which is alleged to be the signal 34 of Karonovic, where "N is a selected positive number satisfying $N+1 \leq M$." This is a significant amount of detail. One or more bits less that the total number of bits of the input signal are exclusively ORed. No suggestion can be found to apply the input signal to the exclusive OR of Fling and certainly not apply less than all the bits of the input signal to an exclusive OR. It is respectfully submitted that the cited references simply would not have suggested the method as specifically claimed to one of ordinary skill.

The remaining independent claims 6 and 11 are believed patentable for the same reasons as claim 1, and, of course, all of the dependent claims as well. The application is therefore believed to be allowable and an early indication thereof is solicited.

| EXPRESS MAIL LABEL NO.: |
| --- |
| EV321705335US |

Respectfully submitted,



December 5, 2003
Date

Gerald P. Parsons
Reg. No. 24,486

PARSONS HSUE & DE RUNTZ LLP
655 Montgomery Street, Suite 1800
San Francisco, CA 94111
(415) 318-1160 (main)
(415) 318-1163 (direct)
(415) 693-0194 (fax)